EDA-B.PRJ.RT.830

MODE-N - TERRESTRIAL POSITIONING NAVIGATION AND TIMING SYSTEM – MILITARY

Participating Members

Consortia/Organization

WTD 61 IECM ELDIS

Mode N is a concept that will permit the gradual replacement of the technically obsolete and inefficient DME/TACAN systems with modern, effective and reliable navigation technology. The new terrestrial navigation technology will broaden capabilities to GNSS-like performance, whilst reducing the bandwidth required in the L spectral band. This will present the opportunity to free up the frequency spectrum for other services, while also avoiding vulnerabilities of satellite systems. Secure and robust PNT services shall be provided for military and civil users. The project started in 2020 and it is currently ongoing.

Objectives

The military requirements of such an A-PNT system have to be assessed and incorporated into the system design. Within the 3-year duration of this project a demonstration system shall be realised. Critical aspects must be identified and addressed, at the same time, initial international harmonisation with the relevant organisations could be considered.

Work Strands

The existing testbed based on Software Defined Radio (SDR) will be extended to a test-range in order to demonstrate potential capabilities and performance. This will initially be put into practice within a small scale for ground tests. Successively, the Manching airfield at the Bundeswehr Technical Centre for Aircraft and Aeronautical Equipment (WTD 61) will be used for initial flight tests. High power RF-components will be constantly developed and evaluated for full operational range application.

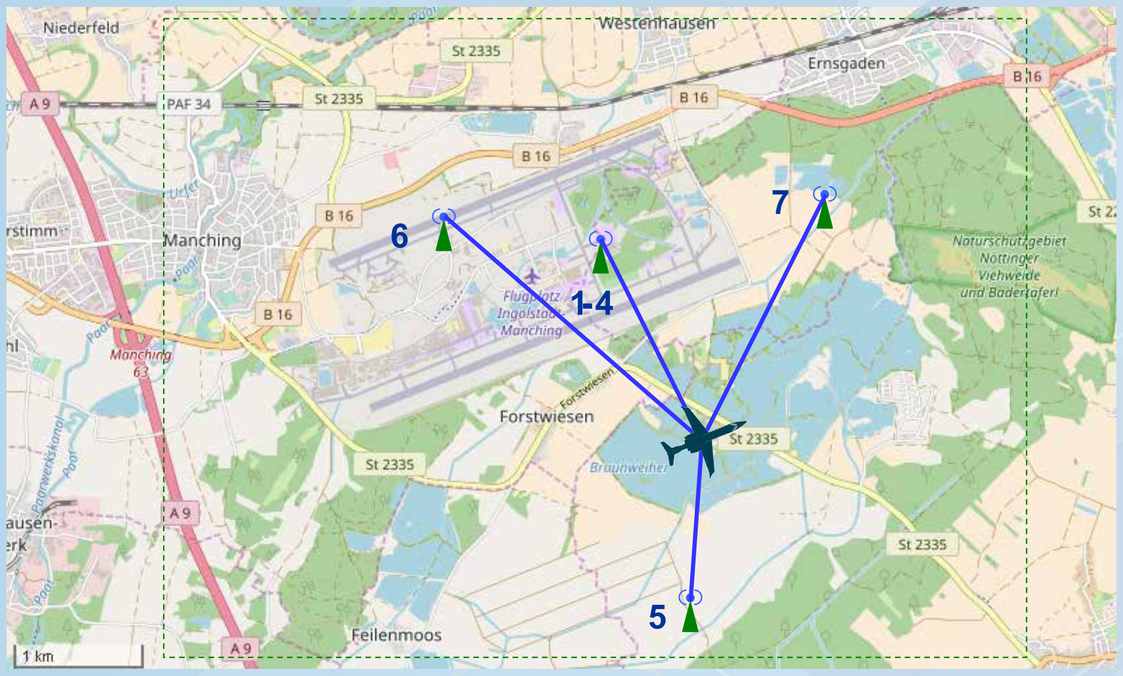
Way Ahead

›› Refinement and Development of the full-scale concept including suitable encryption protocols.

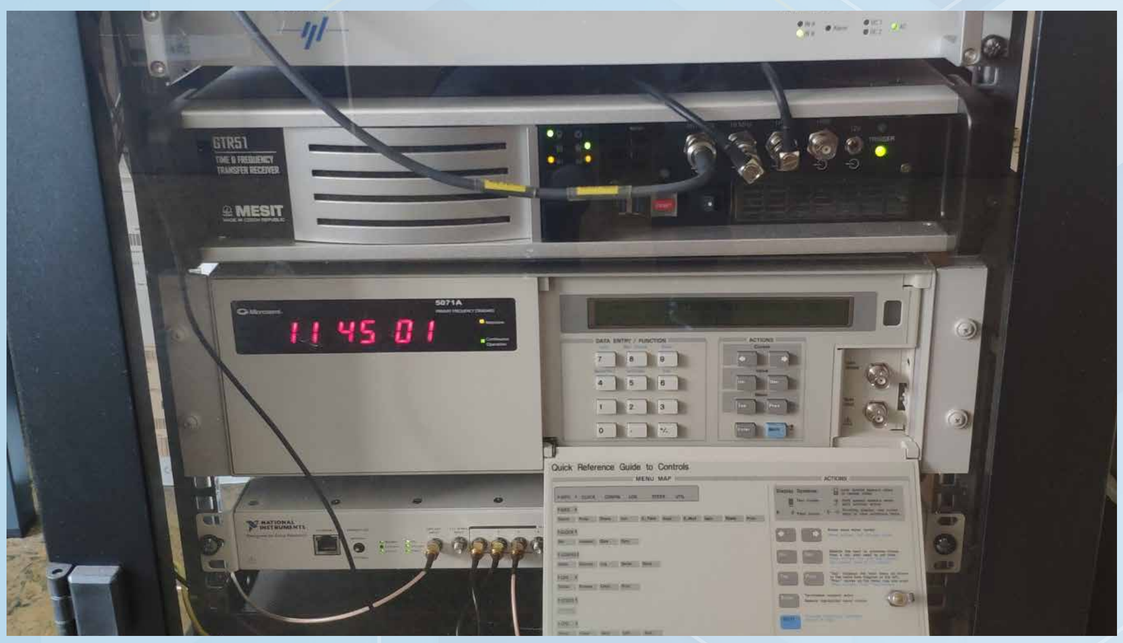
›› Production of small batch series of ground stations and receivers. Test operation and optimisation of the system. Build-up of industrial base.

Link to TBBs, other CapTechs, and other links

- Activity is part of TBB GNC.01 "Navigation in GNSS denied environment" (OSRA TBB 101)
- Links to TBB GNC.02 "PNT superiority and integration into operations and systems" (OSRA TBB 102
- Single European Sky Air Traffic Management Research (SESAR)



Experimental Test-Range for Ground and Flight-Test at WTD 61 Manching (ETSI)



Caesium Time-Standard with Buffering and Time-Receiver,Traceability to UTC via Time Transfer to PTB

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EDA Activities

www.eda.europa.eu/what-we-do/all-activities